

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of processing congestion conditions of a MTP user part in a SS7 network, comprising:

(a) defining a user part congested (UPC) message that indicates when congestion has occurred in a MTP user part of a destination signaling point, and a MTP_STATUS primitive to reduce a number of the signaling messages to be transmitted to the congested MTP user part;

(b) generating the UPC message in the destination signaling point, and transmitting the generated UPC message to an originating signaling point of the signaling message when a MTP of the destination signaling point recognizes congestion conditions of the MTP user part of the destination signaling point; and

(c) generating the MTP_STATUS primitive, and transmitting the generated MTP_STATUS primitive to a MTP user part of the originating signaling point to request the MTP user part of the originating signaling point to reduce the number of the signaling messages to be transmitted to the congested MTP user part of the destination signaling point; and wherein

(b) comprises:

(d) determining whether or not a destination signaling point of a signaling message transmitted from an adjacent signaling point is the signaling point to which the MTP

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belongs when the corresponding MTP receives the signaling message from the adjacent signaling point;

(e) determining whether or not a MTP user part exists for the received signaling message to be transferred if the destination signaling point of the received signaling message is the signaling point to which the MTP belongs;

(f) determining whether or not the MTP user part of the destination signaling point is congested, if the MTP user part for the received signaling message to be transferred exists and the MTP user part is available;

(g) determining whether or not it is necessary for the MTP of the destination signaling point transmit the UPC message to the originating signaling point of the received signaling message, if the MTP user part of the destination signaling point is congested; and

(h) transmitting the UPC message to the originating signaling point if it is determined that it is necessary that the MTP of the destination signaling point transmit the UPC message to the originating signaling point.

2-6. (Canceled)

7. (Currently Amended) The method of claim [[6]] 1, wherein (g) comprises:

(i) determining whether or not the signaling message transferred to the congested MTP user part includes a prescribed number of the signaling messages; and

(j) transmitting one UPC message to the originating signaling point if it is determined that the signaling messages transferred to the MTP user part include the prescribed number of signaling messages.

8. (Previously Presented) The method of claim 7, wherein (j) further comprises deciding not to transmit the UPC message to the originating signaling point if it is determined that the signaling messages transferred to the MTP user part do not include the prescribed number of signaling messages.

9. (Original) The method of claim 7, wherein the prescribed number of signaling messages is set to a level such that the originating signaling point is informed that congestion has occurred in the MTP user part of the destination signaling point without applying a load to the SS7 network.

10. (Currently Amended) The method of claim ~~[[6]]~~ 1, wherein (f) further comprises:
discarding the received signaling message and transmitting a UPU message indicating that the MTP user part of the destination signaling point is not available to the originating signaling point of the discarded signaling message, if it is determined that the MTP user part for the received signaling message to be transferred does not exist or is not available.

11. (Currently Amended) ~~The method of claim 1~~ A method of processing congestion conditions of a MTP user part in a SS7 network, comprising:

(a) defining a user part congested (UPC) message that indicates when congestion has occurred in a MTP user part of a destination signaling point, and a MTP STATUS primitive to reduce a number of the signaling messages to be transmitted to the congested MTP user part;

(b) generating the UPC message, in the destination signaling point, and transmitting the generated UPC message to an originating signaling point of the signaling message when a MTP of the destination signaling point recognizes congestion conditions of the MTP user part of the destination signaling point; and

(c) generating the MTP STATUS primitive, and transmitting the generated MTP STATUS primitive to a MTP user part of the originating signaling point to request the MTP user part of the originating signaling point to reduce the number of the signaling messages to be transmitted to the congested MTP user part of the destination signaling point, wherein step (c) comprises:

(k) determining whether or not a signaling message received by the MTP of the originating signaling point is a MTP signal network managing message;

(l) determining whether or not the received signaling message is the UPC message, if the received signaling message is the MTP signal network managing message;

(m) generating the MTP_STATUS primitive based on the UPC message, if the received signaling message is the UPC message;

(n) transmitting the generated MTP_STATUS primitive to the MTP user part of the originating signaling point to request the MTP user part of the originating signaling point to reduce the number of the signaling messages to be transmitted to the congested MTP user part of the destination signaling point; and

(o) reducing the number of the signaling messages to be transmitted from the MTP user part of the originating signaling point to the congested MTP user part of the destination signaling point.

12. (Previously Presented) The method of claim 11, wherein (m) comprises:

(p) generating a signaling point code of the MTP_ STATUS primitive using a destination parameter of the UPC message; and

(q) generating a congestion level of the MTP_ STATUS primitive using a congestion level parameter value of the UPC message.

13. (Currently Amended) A method of processing congestion conditions of a MTP user part in a SS7 network, comprising:

(a) informing an originating signaling point that congestion has occurred in a MTP user part of a destination signaling point for a signaling message when a MTP of the destination signaling point recognizes the congestion conditions of the MTP user part of the destination signaling point; and

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(b) reducing a number of signaling messages to be transmitted from a MTP of the originating signaling point to the MTP user part of the congested destination signaling point in response to a request for reduction from a corresponding MTP user part of the originating signaling point,

wherein (a) comprises: ~~transmitting a user part congested (UPC) message from the destination signaling point to the origination signaling point to inform the origination signaling point the congestion has occurred in the destination signaling point~~

(c) determining whether or not the congestion has occurred in the MTP user part of the destination signaling point for the signaling message to be transferred;

(d) determining whether or not it is necessary to inform the originating signaling point of the signaling message of the congestion conditions of the MTP user part of the destination signaling point, if the MTP user part of the destination signaling point is congested;

(e) transmitting a message having a prescribed format to the originating signaling point indicating that congestion has occurred in the MTP user part of the destination signaling point, if it is determined that it is necessary to inform the originating signaling point of the signaling message of the congestion conditions.

14. (Canceled)

15. (Currently Amended) The method of claim ~~[[14]]~~ 13, wherein the prescribed message format comprises a congestion level, representing a degree of the congestion conditions, a user part ID, representing information about the MTP user part for the signaling message to be transferred, and a signaling point code, representing a signaling point to which the congested MTP user part belongs.

16. (Original) The method of claim 15, wherein the signaling point code is a destination point code.

17. (Currently Amended) The method of claim ~~[[14]]~~ 13, wherein (d) comprises:
(f) determining whether or not the signaling message transferred to the congested MTP user part includes a prescribed number of signaling messages; and

(g) deciding to transmit the message having the prescribed format to the originating signaling point of the received signaling message if it is determined that the signaling message transferred to the MTP user part includes the prescribed number of the signaling messages; and

(h) deciding not to transmit the message having the prescribed format to the originating signaling point of the received signaling message if the signaling message transferred to the MTP user part does not include the prescribed number of signaling messages.

18. (Original) The method of claim 17, wherein the prescribed number of signaling messages is set to a level such that the originating signaling point is informed that congestion has occurred in the MTP user part of the destination signaling point without applying a load to the SS7 network.

19. (Original) The method of claim 17, wherein the prescribed number of signaling messages is reset when the MTP of the destination signaling point transmits the message having the prescribed format to the originating signaling point.

20. (Currently Amended) The method of claim ~~[[14]]~~ 13, wherein (a) further comprises:

determining whether or not a destination signaling point of a signaling message transmitted from an adjacent signaling point is the signaling point to which the MTP itself belongs when the corresponding MTP receives the signaling message from the adjacent signaling point;

determining whether or not a MTP user part exists for the received signaling message to be transferred, if the destination signaling point of the received signaling message is the signaling point to which the MTP itself belongs; and

determining whether or not the MTP user part for the received signaling message to be transferred is available, if the MTP user part exists.

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21-33. (Canceled)